AMENDMENTS TO THE CLAIMS

1. (Canceled).

2. (Canceled).

3. (Canceled).

4. (Canceled).

5. (Currently amended) Leak detector according to the counterflow principle, comprising:

a first high vacuum pump having an entry side that is connected to an inlet of the leak detector;

a second high vacuum pump having an entry side which is connected to a mass spectrometer;

a primary pump having an entry side which is connected to exit sides of the first and second high vacuum pumps; ~~and~~

a bypass connecting the inlet of the leak detector to the primary pump and including a first valve, wherein the first high vacuum pump is connected to the inlet of the leak detector in a non-throttled manner and without valving, and wherein a second valve is directly connected to the exit side of the first high vacuum pump and is between the exit side of the first high vacuum pump and the primary pump and is controlled in response to the pressure at the inlet of the leak detector; and[.]

a third valve connecting an exit side of the second high vacuum pump with the entry side of the primary pump, said third valve being controlled in dependence on the pressure on the exit side of the first high vacuum pump.

6. (Previously presented) Leak detector according to Claim 5, wherein the first high vacuum pump is started simultaneously with the opening of the second valve upon opening the first valve.

7. (Previously presented) Leak detector according to Claim 5, wherein the first high vacuum pump is activated only after the first valve has been opened when the pressure at the inlet has left the viscous flow range or fallen below a limit value.

8. (Previously presented) Leak detector according to Claim 5, wherein the second high vacuum pump further comprises at least one intermediate inlet connected to the exit side of the first high vacuum pump via a valve, said valve being dependently controlled based upon the pressure of the exit side of the first high vacuum pump.